Scope Management Guideline

January, 2011

Procedures are subject to change without notice.
Check the Capital Project Delivery website
to ensure this is the current version.

Table of Contents

Scope Management Overview 1
Charter 4
Scope Statement 5
Project Management Plan 7
Managing Scope Changes 8

Scope Management Overview

Scope Management is the process used to include all required work in a project or proposed project and to manage and control scope over the life of the project. New Jersey Department of Transportation (NJDOT) Policy & Procedure 818, "Scope Management for Capital Projects," states that projects and proposed projects are properly authorized by the Capital Program Committee (CPC) using a Charter, have defined Scope Statements documenting project work for specific phases (Concept Development, Preliminary Engineering and Final Design) and have a Project Management Plan documenting the overall approach to the management of the project.

Purpose

The primary goal of scope management is to make certain the work of the project or proposed project is identified, authorized, defined and managed over the life of the project. Accomplishing this goal will help to eliminate unauthorized work, minimize unwarranted changes and ultimately minimize the cost of the project and the time required to complete the project.

Definitions

See the Capital Project Delivery (CPD) Process Web Site Glossary Page for current definitions.

Procedure

Authorizing Work: During the Problem Screening (PS) phase, Capital Investment Strategies (CIS) reviews and screens Problem Statements to determine appropriate action. CIS consults with Subject Matter Experts (SMEs), Management Systems Owners and the Division of Project Development (DPD), if needed. If a Problem Statement is to be recommended to advance into Concept Development (CD), CIS coordinates with SMEs and creates a Charter. CIS then presents the Charter and all other pertinent documentation to the Capital Program Screening Committee (CPSC) for recommendation to the CPC. Ultimately, the CPC approves the Charter authorizing the Problem Statement to advance into CD. This approval also authorizes the time and funds to complete the work of CD.

Defining and Managing Scope: For phases following PS, the scope of the effort must be documented and formally approved. This is accomplished using a Scope Statement. There are separate Scope Statement templates for CD, Preliminary Engineering (PE) and Final Design (FD). Each Scope Statement template is based on the Project Delivery Process and lists all of the products for the phase. The DPD Lead Engineer customizes each Scope Statement based on the specifics of the project or proposed project. The DPD Lead Engineer and the Division of Project Management (DPM) Project Manager use the Scope Statements to manage and control work.

Documenting Project Management Approach: The Project Management Plan (PM Plan) documents the overall project management approach. The DPD Lead Engineer creates the initial PM

Plan late in CD documenting any significant variation from the standard Project Delivery Process. The PM Plan also documents the justification for each variance. In future phases, the DPD Lead Engineer or the DPM Project Manager revises the PM Plan, as needed, showing any changes to the previously defined approach.

Key Products

Charter: The Charter is a document created by CIS and approved by the CPC that authorizes the existence and advancement of a problem statement, and provides the authority to apply organizational resources to work activities. The Charter typically includes the name of the problem statement, justification, objectives, recommendation, responsible unit and authorizing signatures.

Scope Statement: The CD, PE and FD Phases each have a Scope Statement specific to the work to be accomplished in that phase. The Scope Statement lists the anticipated work for a project and includes details of the project deliverables. This includes a description of the limit of scope of the project to the extent known at the beginning of the phase.

Project Management Plan: A formal document that is mandatory for all projects and proposed projects. The PM Plan details the approach to be used to deliver a specific project and how the project will be executed, monitored and controlled. The PM Plan includes the overall approach and justification for exceptions to the standard project delivery process.

Major Stakeholders

Capital Investment Strategies (CIS): CIS reviews and ranks Problem Statements. CIS also works with stakeholders, including SMEs, to develop Charters on behalf of Management System Owners for presentation to the CPSC.

Capital Program Committee (CPC): The CPC signs the Charter authorizing the proposed project to advance into CD and begin work. Following CD, the CPC will authorize proposed projects and projects to advance to PE and then to FD.

Capital Program Screening Committee (CPSC): The CPSC reviews the Charter and related documentation and submits to the CPC for authorization to advance into CD. In later phases, the CPSC will recommend the CPC authorize the proposed project or project to advance to the next phase.

Designer: The Designer performs work in accordance with the approved Scope Statement at the direction of DPD (for CD and PE) or DPM (for FD and Construction).

Division of Project Development (DPD): DPD collaborates with CIS and Management Systems Owners as needed during the development of the Charter. DPD concurs with the Charter before CIS presents to CPSC. DPD creates and manages the CD and PE Scope Statements and creates the Scope Statement for PE. DPD creates the PM Plan.

Division of Project Management (DPM): DPM collaborates with DPD on the development of the FD Scope Statement during PE. DPM is responsible for any required updates to the PM Plan during FD. DPM manages and controls scope beginning with the FD Phase.

Management System Owner: Management System Owners track and rank transportation problems within their responsible areas. For appropriate transportation problems, Management System Owners present Problem Statements to CIS for review. Management System Owners collaborate with CIS and DPD during the creation of the Charter and the respective Scope Statements throughout the project lifecycle. The Management System Owner presents the Charter to the CPSC for recommendation to the CPC.

Subject Matter Experts: SMEs may be involved in any aspect of scope management. SMEs are often consulted during Problem Screening to provide input for Tier 1 and Tier 2 Screenings. SMEs are consulted during other Phases in the creation and review of Scope Statements. SMEs sign PE and FD Scope Statements indicating concurrence for their related work in context of the specific project.

Change

The Charter typically is not changed once authorization is granted. Changes to scope are the responsibility of the DPD Lead Engineer during CD and PE and the DPM Project Manager during FD and Construction (CON). Significant changes to Scope Statements, as defined in NJDOT Policy & Procedure 405 "Change in Project Scope and Status," once initially approved, must adhere to and follow Change Control Board (CCB) guidance. The PM Plan is revised at the end of each phase, if needed.

Communication

Communication occurs as needed between various stakeholders in the execution of the scope management process. Typically, stakeholders will communicate and collaborate in the development of the scope management products (Charter, Scope Statements and PM Plan). Scope Team meetings must be attended by all involved SME groups and the representative must have sufficient authority, knowledge and experience to address issues and make decisions. The representative SME is responsible to communicate project or proposed project scope and all decisions to their respective organizations. The Design Communications Report (DCR) is utilized to document communications regarding design decisions. The Project Reporting System (PRS) is utilized to document and communicate project status.

Key Performance Indicators

Key Performance Indicators are needed to measure the performance of the scope management process. It is important to measure performance of the scope management process, including the tools and the use of the tools, to see impact to the ultimate objectives of lower cost and fewer schedule delays and to identify additional improvements to be incorporated into the process. An initial

measurement (baseline) should be made and used for comparison after the process changes have been in place for a significant period.

Charter

Purpose

The Charter authorizes work to begin on the proposed project. To accomplish this, the Charter must briefly state the scope of the work being authorized. The Charter is used to authorize CD only. After CD, the work is authorized by the approved Scope Statement specific to each phase. Since the Charter is used only for CD, the scope of work described is only the work to be completed during CD. The Charter is used in future phases to help keep scope aligned with the originally authorized work.

Charter Template Sections

Most of the fields in the Charter Template are self-explanatory and align with data to be entered into PRS. Information entered into the descriptive fields is to be brief. Charters are expected to be no longer than one page. Charters for similar proposed projects originating in Management Systems can be combined into a single Charter for the group with an attached listing of the associated proposed projects.

Justification: Explain why the work of this effort is important and why the work should be approved now. This should be a single paragraph. The intent is to answer "Why do this work now?"

Objectives: Provide a brief overview of what will be accomplished. The intent is, in one or two sentences, to answer "What will be fixed?" For example, "Replace the southbound bridge deck."

Description: Provide additional detail as needed to explain the objectives. For example, "Route 130 is a state highway with two lanes in each direction with shoulders and a grassy median. The final product will be the same. The existing southbound lanes are on an older structure than the northbound lanes. The southbound deck has deteriorated and needs to be replaced. The southbound deck will be removed and a new deck constructed."

Summary Milestone Schedule: At this point in the lifecycle of the proposed project there is not enough information to provide a detailed schedule with any confidence. Include in the Charter any summary milestones that are known. Include when CD is expected to begin and end. If possible, include what year FD will finish and in what year(s) Construction will occur.

Summary Budget/Budget Cap: The authorizing body, the CPC, is only authorizing CD. Include in the Charter the estimate for completing CD.

When to Use

Charters are to be created at the end of PS and are used only for proposed projects that are to be recommended to advance into CD.

Procedure

During Problem Screening:

1. CIS ensures the Problem Statement is properly completed, accurately describes the problem and that the work should be advanced at this time. For proposed projects advancing to CD, CIS collaborates with the Management System Owner, DPD and SMEs to create the Charter.
2. The appropriate Management System Owner presents the Charter to the CPSC for recommendation to the CPC. The Management System Owner is essentially the sponsor of the work at this time and must justify the scope and timing (why address this problem now), as defined in the Charter, to the CPSC.
3. The CPSC recommends to the CPC that the proposed project advance to CD.
4. The CPC approves the Charter authorizing the proposed project to advance to CD.

During Concept Development:

5. The DPD Lead Engineer refers to the Charter when developing the CD Scope Statement to ensure all needed work is accomplished and to facilitate constraining the proposed project scope to that authorized by the CPC.

During Any Phase:

6. The DPD Lead Engineer, DPM Project Manager, Designer and SMEs refer to the Charter when assessing any requested change in scope. Any change that exceeds the original bounds of the Charter, as authorized by the CPC, must be presented to the CPSC and CPC for approval.

Communication

Communication and collaboration are essential to successful scope management. CIS works with Management System Owners and DPD to define a Charter that clearly summarizes the work to be authorized for CD. Management System Owners work with CIS and DPD to prepare Charters and then present the Charters to the CPSC for recommendation for approval to the CPC. SMEs may also be consulted in the development of Charters. It is critical that the Scope for CD is clearly defined in the Charter and that the Management Systems Owner, CIS and DPD all concur on the scope and the justification before the Charter is submitted to CPSC for recommendation to CPC.

Scope Statement

Purpose

The Scope Statement defines and formally authorizes work to complete for a specific phase of the proposed or actual project. To accomplish this, the Scope Statement must clearly document the scope of the work being authorized. Scope Statements are used to identify and authorize the work to be completed in CD, PE and FD. Scope for the Construction (CON) Phase is defined and authorized in the Contract Documents. Each Scope Statement provides sufficient detail for a Designer to commit to completing the defined scope of work for an agreed to dollar amount over a specific period.

When to Use

Scope Statements are created at the beginning of CD and at the end of CD and PE and are used to define and manage the work to be completed during each particular phase.

Procedure for CD Scope Statement

During Concept Development:

1. At the initiation of CD, the DPD Lead Engineer uses the CD Scope Statement Template to create the CD Scope Statement for the specific proposed project. The DPD Lead Engineer consults SMEs as needed.
2. DPD Management reviews and approves the CD Scope Statement.
3. The DPD Lead Engineer uses the approved CD Scope Statement to execute a Task Order agreement, if a Consultant will be used, or to engage the Division of Design Services to complete the scope of work.
4. During CD, the DPD Lead Engineer uses the CD Scope Statement to manage and control work.

Procedure for PE Scope Statement

During Concept Development:

5. Near the end of CD, once the Preliminary Preferred Alternative has been created and the Local Officials have been briefed, the DPD Lead Engineer uses the PE Scope Statement Template to create the PE Scope Statement for the specific proposed project.
6. Subject Matter Experts review the PE Scope Statement and provide comments to the DPD Lead Engineer.
7. SMEs approve their assigned sections of the PE Scope Statement.
8. DPD Management reviews and approves the PE Scope Statement.
9. The DPD Lead Engineer includes the PE Scope Statement in the CD Report.
10. The DPD Lead Engineer uses the PE Scope Statement to solicit a Designer (if a Consultant will be used) or to develop an understanding with the Division of Design Services to complete the scope of work for PE.

During Preliminary Engineering:

11. The DPD Lead Engineer uses the PE Scope Statement to manage and control work.

Procedure for FD Scope Statement

During Preliminary Engineering:

12. Near the end of PE, during the creation of the PE Report, the DPD Lead Engineer uses the FD Scope Statement Template to create the FD Scope Statement for the specific project.
13. Subject Matter Experts review the FD Scope Statement and provide comments to the DPD Lead Engineer.
14. SMEs approve their assigned sections of the FD Scope Statement.
15. The DPM Project Manager reviews the FD Scope Statement and provides comments to the DPD Lead Engineer.

16. The DPM Program Manager accepts the FD Scope Statement.
17. DPD Management reviews and approves the FD Scope Statement.
18. The DPD Lead Engineer includes the FD Scope Statement in the PE Report.

During Final Design:

19. The DPM Project Manager uses the FD Scope Statement to negotiate with the Design Consultant or with NJDOT Design Services to complete the scope of work for Final Design.
20. The DPM Project Manager uses the FD Scope Statement to manage and control work.
21. The DPM Project Manager uses the FD Scope Statement to create Contract Documents.

Communication

Communication and collaboration are essential to successful scope management. Scope for a specific phase must be clearly defined in the phase Scope Statement. SMEs, DPM and DPD must concur on the scope to be completed. The DPD Lead Engineer, SMEs and the DPM Project Manager must attend and participate in Scope Meetings. Designers work with DPD, DPM, and SMEs throughout the phases executing work as defined in Scope Statements.

Project Management Plan

Purpose

The Project Management Plan defines how the project or proposed project is executed, monitored and controlled. All projects will follow the Project Delivery Process. The PM Plan clearly documents ways the Lead Engineer and Project Manager will customize the Project Delivery Process to the specific project. The PM Plan documents any significant deviation in process from the standard and provides justification for the different approach. This allows major stakeholders, including NJDOT Senior Management and FHWA, to see how and why a specific project will execute any work outside the normal process. In the case of projects estimated total construction cost in excess of $500 million, or designated as a Major Project by the FHWA, additional PM Plan guidance must be followed and can be found on the FHWA web site.

When to Use

PM Plans are created near the end of CD after the Preliminary Preferred Alternative has been determined and the local officials have been briefed. If necessary, the PM Plan is updated toward the end of PE and the end of FD. The PM Plan is used throughout the project as needed to reference the project execution approach.

Procedure

During Concept Development:

1. Near the end of CD, once the Preliminary Preferred Alternative has been created and the Local Officials have been briefed, the DPD Lead Engineer uses the PM Plan Template to create the PM Plan for the specific proposed project.
2. The DPD Lead Engineer consults SMEs as needed.
3. DPD Management approves the PM Plan.
4. The DPD Lead Engineer includes the PM Plan in the CD Report.

During Preliminary Engineering:

5. Once the Design Exception Report has been approved (if required) and the Environmental Document has been completed, the DPD Lead Engineer updates the PM Plan, if needed.
6. The DPD Lead Engineer informs the DPM Project Manager of the updated PM Plan.
7. DPD Management approves the updated PM Plan.
8. The DPD Lead Engineer includes the PM Plan in the PE Report.

During Final Design:

9. During FD, once the Plans, Specifications and Estimates package is complete, the DPM Project Manager updates the PM Plan, if needed.
10. DPM Management approves the updated PM Plan.

Communication

Communication and collaboration are essential to successful scope management. Any deviations from the standard Project Delivery Process are documented in the PM Plan. The DPD Lead Engineer and the DPM Project Manager must collaborate on the creation of the PM Plan and on any revisions over the life of the project. The PM Plan must be available to key stakeholders such as SMEs, NJDOT Senior Management and FHWA.

Managing Scope Changes

All significant changes to a project's or a proposed project's scope are subject to NJDOT's Change Control Board Procedures. Guidance on these procedures is available on the NJDOT web site. All affected stakeholders (SMEs, NJDOT Senior Management, FHWA) must be notified of any significant change.